

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/032597 A3

(51) International Patent Classification⁷: H03L 7/08, 7/14

(74) Agents: SHAPIRO, Mitchell, W. et al.; Miles & Stockbridge P.C., 1751 Pinnacle Drive, Suite 500, McLean, VA 22102 (US).

(21) International Application Number:
PCT/US2003/032158

(22) International Filing Date: 9 October 2003 (09.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/416,924 9 October 2002 (09.10.2002) US

(71) Applicant (for all designated States except US): ACORN PACKET SOLUTIONS, LLC [US/US]; 2010 Corporate Ridge, Suite 700, McLean, VA 22102 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): SKERRITT, Michael [US/US]; c/o Acorn Packet Solutions, LLC, 2010 Corporate Ridge, Suite 700, McLean, VA 22102 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

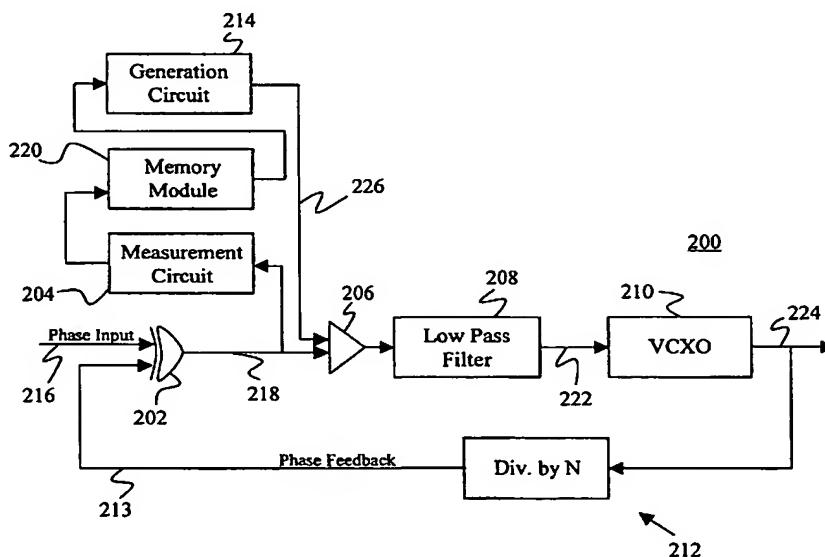
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR MAINTAINING AN ACCURATE FREQUENCY ON A VOLTAGE CONTROLLED OSCILLATOR



(57) Abstract: A method for phase-locking a voltage controlled oscillator (210) is disclosed. The method comprises receiving, at a phase detector (202), a phase input signal (216) and a phase feedback signal (213) from the voltage controlled oscillator (210); measuring (204) a pulse width property of an error signal (218) output from the phase detector (202) to obtain a pulse width property measurement; storing the pulse width property measurement in a memory (220); and generating (214) a new signal (226) from the stored pulse width property measurement to phase-lock the voltage controlled oscillator (210). The method of the present invention may be used to calibrate a clock, in clock holdover and in qualification of clock sources.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
23 December 2004

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/32158

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H03L 07/08, 07/14

US CL : 331/14, 17, 25

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 331/1A, 14, 17, 18, 25, DIG 2; 327/156-159; 332/127; 360/51; 375/376; 455/260

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | US 3,883,817 A (CLIFF) 13 MAY 1975 (13/05/1975), SEE THE ABSTRACT. | ALL |

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

03 August 2004 (03.08.2004)

Date of mailing of the international search report

13 OCT 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

David Mis

Telephone No. (571)272-1650